Notebook, N-01-02-03

This notebook was used by Edison during February 1901. It contains an enumerated list of sixty-three projects to be undertaken regarding the development and manufacture of storage batteries. Several of the entries list projects to be assigned to "Freddy" and "Rogers," probably Frederick P. Ott and O. A. Rogers. At the end of the book is a note by Edison outlining the features of the Electric Storage Battery Co.'s "Phaeton" model. The pages are unnumbered. Only 11 pages have been used.

Feby 3rd 1901

1 Have chemist make some precipitated Nickel Sulfide

2 Try 1/32 grid hard pressed without Grafite

3 Try 1/32 grid hard pressed with 8 + 2 grafite

4 " " " 7+3 + 1% Reduce? Then Ox

5 See if we can plate nickel over flake grafite

6 Freddy to take nickel wire + roll see how thin he can get it

7 Roll powdered nickel see if it will flake

8 Dehydrate Ni Hydroxide till brown use 7+3 and very hard pressure see how much can be got in grid & how it acts

9 Ditto till Black

10 Look Edgewise at grafite + 004 ni under Micro to see reducing thickness. to about 2/5 of 1000

11. Mould a plate of Common Graphite wear of Dixons and see if they swell in 40% Soda.

12 Try all oxidizing agents on NiO anhydrous also Ni reduced by Hydrogen

13 Melt KOH & when very hot project dried Ni Hydroxide into it.

14 Bring Ni Hydroxide up to high Temp in glycerine with Chl Zinc, Chl Calcium. Castor Oil.

15 Be sure and make a plate from the Electrolytic Peroxide.

16 Have ~~chemist~~ Ruffy make Hemisulfide Ni_2S by igniting Sulfate in hydrogen. pale yellow brittle mass can be melted in glass.

17. Have Chemist make Phosphide of Nickel

18 Edison to make the Crystaline green Ni hydrate Watts Reg

19 Treat Cyanide of Nickel by hypochlorite soda Liebig says its intensely black & easy to wash

20 Have chemist test our Nitrate & sulfate Nick

21 Try arsenide Ni

22 put Oxy hydrate in gasoline & act on it by bromine also pass chlorine ditto Chl of Brom to peroxide without hydration –

Feby 5 1901

23 Try non-grid with plain nickel electrode in KOH 20% saturated with Chlorate K.

24 Ditto without Kchlorate but with KCl. have now discharged then change the Chlorate formed & iron reduced on discharging Chlorate reduced to KCl & O xyd ↓ | Try Bromide & Iodide in same way — | Bromate & Iodates ?

25 = Same as above but with KOH 20% saturated with Iodine which it takes up as much as there is I in K

26 - Have freddy make 50 frames & some Cups to fit his mould so we can have a Capsule grid 1/2 X 2 long - & Have Rogers roll some .002 sheet & perforate for use as Cups. —

27 Boil a 20% KOH sol & boil Sulphate Nic & precipitate & wash as swelling

28 Boil Sulphate Ni & project into Hypochlorite K

29 Dehydrate Sulfate Nickel after powdering fine & then project into boiling KOH

30 Boil powdered Sulfate Nickel in Conc Sul acid then pour acid into H_2O. ?

31 Make com reduced Ni by boiling w.c. reducing agents Formaldehyde etc

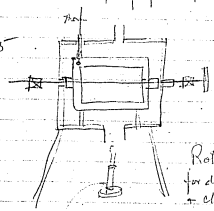
32 Dehydrate Sulfate Ni & put in Alcohol sat with KOH stix & warm

33 – precip SulNi by NH_3 –

34 Try Organic alkali, naphthalamine etc to precip Ni Hydroxide –

Feby 9th 1901

35



Rotation Cylinder for dehydrating Ni Hydr + cleaning precipitates

36 Try electrolytic Nickel cleaning etc [illegible] precipitating a hydrate –

37 Dehydrate Cyanide Ni & try in [illegible]

38 Freddy make a plate from Ni ppt by MgO for heat in 20% for annealing

39 = Benzoate Ni Sol Alcohol, There is no H_2O in Benzoate - put in otherwise KOH, this will give $BenzK + NiO$.

40 will Carb Ni in KOH, work with Hypoch.

41 - Try Resinate Ni in Methyl KOH,

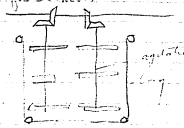
42 Nitrite Ni reddish yellow crystal can be heated to 100 in air without decomp, but in water only to 80. Happens decomposes from at Common Temp giving off Nitric ox & leaving basic salt $NiO\ Ni(NO_3)_2$ —

43 Nitrate Nickel Soluble in alcohol = " " Nitrite in powered form first gives greenish yellow basic salt, then peroxide, then protoxide,

44 = Oleate Ni in Methyl KOH.

45 Try driving off Colloid water from the Ni hydroxide I now have on hand. The rotating cylinder is proper way but can do a lot in dish & have flat marble

45. make a bag agitation thing.



46 try Zinc - weak H_2SO_4 for solution & neg plate of lead storage, Theory being discharge Pb reduced to metal + Zn to sulfate for other purpose or storage,

47 - plate moved at 200 atmos of N_2O_3 gas with pure passed no current with 110 volts, a Weston Voltmeter sensitive - Sta the electrolytic Superoxide Cell

48 - Write Pilling to have Cooke send some Kish graphite from Blair's furnace along to see if it burns their Nitrate, for use in storage. Let

Feby 9. 1901

49 Wash some Iron Mt Hydroxide LLC nitrate to Litmus reaction, then boil 2 oz of phenolphthalein, shows free KOH

50 Dehydrate some Cuprate Ni + drive off acetate, try — grid —

51 Dock some Green hydroxide Ni in KOH dry it as Cond. also KOH left in it — make plate —

52 Experiment with Ferric oxide graphite with 7 + 4 graf + use Collodion, not with Glycerine, Molasses, syrup, fuse KOH work to Co use graphite —

Feby 10 1901

Mixing BaO_2 with Red Prussiate K gives off pure
53 Oxygen, —

54 Will pass Oxygen generated into water containing Ni hydrate, oxidize it ?

55 It may be that in KOH solution a Cobalt or Ni grid dissolving Chlorate of K in solution the Co or Ni superoxides will not by contact reaction so can get O from Chlorate + have Current dependent — Try it — use old Fe Electrodes — diff. + also pth Chlorate in KOH

56 Try Reiffs Concentrate for Leland's touch it —

57 Try Cobalt yellow made by precip by Nitrite K = Leland's depolarizer —

58 Try Chromate Lead. Depolar Leland — also Chromate of Iron etc

59 See Rogers & Fuller about

60 Might try monocomb K — Dry mix with Ni Hy used at 1st a reducing Current —

61 = Add 10% of Solid KOH to the Ni hydrate when dry & ground together & moved plates.

62 — Try mixing acetate K with Ni 10% say — use at 1st reducing at —

C3 = I think what is wanted in gravid is not
*Hydrate but Niccolate of K which is used
Can probably get it by using cold water
for precipitg + air drying —

New pasted battery. Elect Stge Co bringing out
Phantom = 42 cells in 1 box. estimated wt
26 lbs per cell. total wt 1092 @ 30 amps
4 ½ hours

44 cells 1 box wt 21 lbs cell. total wt
924 Capacity 24 amp 4 ½ hours

42 cells 1 box 28 lbs cell. total wt
1176 Cap 32 amp 4 ½ hours